

Operating Instructions



Radio Receiver, 1-Channel

- > G053/1-11-1
- > G053/1-11-2
- > G053/1-11-3



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2 General Information

2.1 Manufacturer

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2.2 Operating Instructions Information

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Subject to alterations.

3 Intended Use

The 1-channel radio receiver is used to switch electrical loads via radio transmission. The transmission is carried out at a frequency of 868.3 MHz. The transmitters must support the EnOcean protocol of the PTM- and STM-modules. The output of the receiver can be switched by a maximum of 10 transmitters. Therefore each transmitter must be taught-in once.



The devices can be operated without registration and license free on the territory of the EU, Switzerland and Cyprus. The use in other countries must be explicitly clarified!

4 General Safety Instructions

The devices must be used only for the permitted purpose. Incorrect or impermissible use or non-compliance with these instructions invalidates our warranty provision. Any alterations or modifications to the device are not permitted. Use the device only if it is undamaged and clean.

WARNING

Installation, maintenance, overhaul and repair may only be carried out by appropriately authorised and trained personnel.

Observe the following information during installation and operation:

- ▶ National and local safety regulations
- ▶ National and local accident prevention regulations
- ▶ National and local assembly and installation regulations
- ▶ Generally recognized technical regulations
- ▶ Safety instructions in these operating instructions
- ▶ Characteristic values and rated operating conditions on the rating and data plates
- ▶ Additional instruction plates fixed directly to the device

WARNING

The device must not be used in connection with devices that may directly or indirectly serve health- or life-saving purposes or whose operation causes hazards to human beings, animals or asset values.

The described products have been developed in order to assume functions as part of an entire plant or machine. The responsibility taken by the manufacturer of a plant or machine implies ensuring correct general function of the system or machine implies a safeguarding of correct general function.

5 Conformity to Standards

The relevant standards are listed in the EC Declaration of Conformity. This document is available under www.stahl-ex.com.

6 Transport and Storage

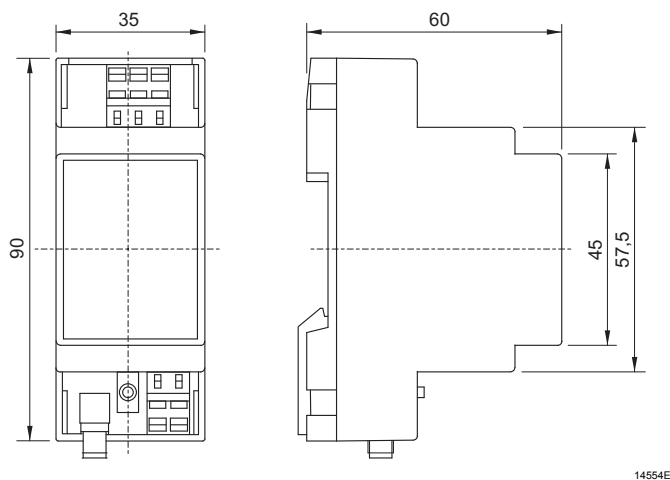
- ▶ Transport and storage are only permitted in the original packing.

7 Technical Data

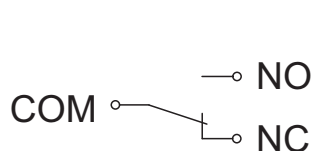
Version	G053/1-11-1: 1 change-over contact (relay) G053/1-11-2: NPN transistor G053/1-11-3: PNP transistor	
Protocol	EnOcean	
Frequency	868.3 MHz	
Switching frequency	approx. 9000 telegrams at repetitions / h	
Number of channels	1 (relay version potential-free)	
Inputs	1 radio channel, max. 10 transmitters per channel	
Outputs	1 change-over contact (relay), NPN or PNP transistor	
Rated operational current	24 V AC: max. 0.18 A 24 V DC: max 0.22 A	
Rated operational voltage	G053/1-11-1 (1 change-over contact): 24 V AC / DC (-15 ... +10 %) G053/1-11-2 (NPN transistor): 24 V DC (-15 ... +10 %) G053/1-11-3 (PNP transistor): 24 V DC (-15 ... +10 %)	
Switching capacity	G053/1-11-1 (1 change-over contact):	250 V AC / 6 A 24 V DC / 2 A
	G053/1-11-2 (NPN transistor):	24 V DC / 0.2 A
	G053/1-11-3 (PNP transistor):	24 V DC / 0.2 A
Voltage drop	G053/1-11-2 (NPN transistor): 2.5 V G053/1-11-3 (PNP transistor): 2.5 V	
Utilization category	G053/1-11-1 (1 change-over contact): AC-15 G053/1-11-2 (NPN transistor): DC-13 G053/1-11-3 (PNP transistor): DC-13	
Rated insulation voltage	250 V AC	
Rated impulse withstand voltage	2.5 kV	
Indications	green LED: Rated operational voltage orange LED: Switching state signalling	
Connection		
Terminals	WAGO CAGE CLAMP, Series 236	
Connection cross-section	0.08 ... 2.5 mm ² (AWG 28...14)	
Ambient conditions		
Ambient temperature	0 ... +55 °C	
Storage/transport temperature	-25 ... +85 °C	
Interference immunity	acc. to EMC Directive	
Vibration resistance	acc. to IEC/EN 60068-2-6	
Schock resistance	acc. to IEC/EN 60068-2-27	
Degree of pollution	2 acc. to IEC/EN 60664-1	
Degree of protection	IP20 acc. to IEC/EN 60529	
Mounting	snap mounting on DIN rail	
Antenna	external antenna always required for optimum transmission range	
Note	inductive loads (contactors, relays, etc.) are to be suppressed by suitable circuitry	

8 Dimensions

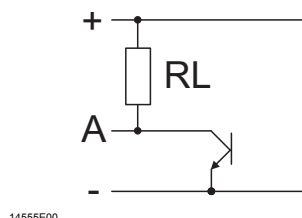
Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



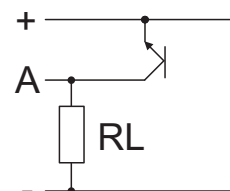
Schematic Contact Symbols



G053/1-11-1: 1 change-over contact



G053/1-11-2: NPN transistor



G053/1-11-3: PNP transistor



The contact symbols are shown for the current-free state of the receiver.

9 Installation

Mounting / wiring

The transmission range strongly depends on the local conditions. Thus the radio signal can be strongly affected by conductive materials. This also includes thin foils, e.g. aluminium lamination on insulation materials. A test with the field intensity meter EPM 300, R. STAHL Order No. 209483 should be carried out.

Typical transmission ranges are:	
Line of sight in a free field	approx. 300 m
Line of sight in corridors	approx. 30 m
Line of sight in halls	approx. 100 m
Steel concrete walls	approx. 10 m through 1 wall
Brick walls	approx. 20 m through max. 3 walls

- ▶ Only suitable antennas must be used, e.g. RF magnet foot antenna with 2.5 m connecting cable and SMA plug-in connector: R. STAHL Order No. 209484
- ▶ Mount the antenna on a sheet metal (min. 250 x 250 mm) as an HF counterweight
- ▶ Maintain a lateral distance of min. 300 mm to the next adjacent wall or source of disturbance
- ▶ Do not bend or jam the antenna cable
- ▶ Observe the minimum bending radius of > 15 mm

Arrangement of the receiver and switch antenna



Optimum mounting

13740E00



Suitable mounting



14351E00

14352E00

Unsuitable mounting

10 Putting into Service

Before putting into service

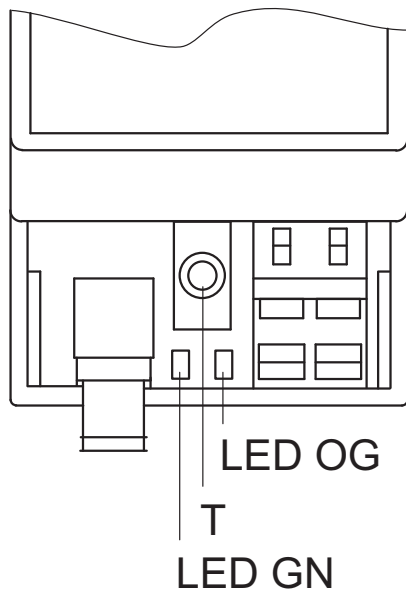
- ▶ Make sure that the device is not damaged.
- ▶ Make sure that the device has been installed correctly.

Note:

The transmission of one radio signal from transmitter to receiver takes approx. 80 to 100 ms on the basis of the EnOcean data transmission. The switching signal of a transmitter must not be generated in shorter time sequences as otherwise this signal will be suppressed.

A maximum of 10 transmitters can be taught-in simultaneously. To this end, the LEDs indicate the operating modes. After providing the operating voltage to the receiver, the orange LED flashes when no switch has been taught-in. If the orange LED is off, switches have already been taught-in.

Operating and display elements



14553E00

Operating mode selection

There are six different operating modes that can be selected after switching on. For selection keep pushbutton »T« pressed while switching on. The desired operating mode is confirmed by quickly pressing the pushbutton »T« again (approx. 1 s). If the pushbutton »T« is not pressed again, the next operating mode is switched on after 5 s.

Operating mode	LED GN	LED OG	Function
Standard	flashes	flashes	Relay energized upon actuation
Standard inverse input	on	flashes	Relay de-energizes upon actuation, inverse output signal
Relay energized	flashes	on	Relay energizes when rated operational voltage is provided, de-energizes upon actuation
Relay energized, inverse output	on	on	Relay energizes when rated operational voltage is provided, de-energizes upon actuation, inverse output signal
Conjunction	on	flashes (2 Hz)	Relay energizes as soon as one switch is actuated, de-energizes when all taught-in switches are not actuated
Latching function	flashes (2 Hz)	on	Latching function PTM 230

Teach-in of a switch

- ▶ Press pushbutton »T«: »LED GN« flashes slowly (2 Hz)
- ▶ Actuate switch: »LED OG« lights up briefly
- ▶ Press pushbutton »T«: »LED GN« lights up

Inverse teach-in of a switch (switch will be inverted)

- ▶ Press pushbutton »T«: »LED GN« flashes slowly (2 Hz)
- ▶ Actuate switch: »LED OG« lights up briefly
- ▶ Press pushbutton »T«: »LED OG« lights up, switch is actuated
- ▶ Release pushbutton »T« and actuate it again (inverted edge switching)

Deletion of a switch

- ▶ Press pushbutton »T« for 5 s: »LED GN« flashes quickly (5 Hz)
- ▶ Actuate switch to be deleted: »LED OG« lights up briefly
- ▶ Press pushbutton »T«: »LED GN« lights up

Deletion of all switches





- ▶ Press pushbutton »T« for 5 s: »LED GN« flashes quickly (5 Hz)
- ▶ Press pushbutton »T« again for 5 s until the »LED GN« goes out: »LED GN« lights up, »LED OG« does not light up

11 Maintenance, Overhaul and Repair

With careful mounting as described above, only minor maintenance is necessary. We recommend regular maintenance in the following steps:

- ▶ Check functions
- ▶ Remove dirt

12 Accessories and Spare Parts

<div style="text-align: center;">  WARNING </div>				
Use only original R. STAHL accessories and spare parts.				
Designation	Illustration	Description	Art. no.	Weight kg
RF magnet foot antenna	 14581E00	with connecting cable 2.5 m	209484	0.060
Radio repeater, 24 V DC	 14726E00	DIN rail mounting device for radio signal amplification	209457	0.056
Field intensity meter EMP 300	 14589E00	mobile device for radio range testing	209483	0.080

13 Disposal

The national waste disposal regulations have to be observed.

